What is claimed is:

Sub A1

~~1. An optical analysis chamber, comprising~~

~~An optically transmissive elongate tubular body having an elongate tubular body wall including an interior surface and an exterior surface, said interior surface of said body wall defining an elongate sample passageway for containing a sample material;~~

~~Wherein said body wall further includes a first optically transmissive window, said window having a curved exterior surface portion, through which optical radiation passes, said window having a non-uniform thickness about the sample passageway selected so as to optimize optical coupling therewith for analyzing said sample material.~~

2. The optical analysis chamber of claim 1, wherein said first window further comprises a substantially curved interior surface portion.

3. The optical analysis chamber of claim 2, wherein said tubular body is an electrophoresis capillary.

4. The optical analysis chamber of claim 2, wherein said exterior surface of said first window defines an optical interrogation beam transmission surface having a substantially semi-cylindrical shape.

5. The optical analysis chamber of claim 2, wherein the longitudinal axis of said sample passageway is offset from the longitudinal axis of said tubular body.

6. The optical analysis chamber of claim 2, wherein said exterior surface of said window defines an optical interrogation beam transmission surface having a substantially acylindrical shape.

7. The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed through said sample passageway and is brought substantially to focus at a location near said exterior surface of said tubular body beyond said sample passageway.

8. The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed through said sample passageway and is brought substantially to focus at a location near said interior surface of said tubular body beyond the center of said passageway.

9. The optical analysis chamber of claim 2, wherein incident optical radiation passing though said window is directed through said sample passageway and is brought substantially to focus at a location within said sample passageway.

10. The optical analysis chamber of claim 2, wherein incident optical radiation passing through said window is directed through said sample passageway and is brought substantially to focus at a location near said interior surface of said tubular body before the center of said passageway.

11. The optical analysis chamber of claim 2, wherein incident optical radiation passing though said window is directed to substantially focus about the center of said passageway.

12. The optical analysis chamber of claim 2, wherein a portion of said exterior surface includes a reflective coating so as to redirect optical radiation towards said sample passageway.

13. The optical analysis chamber of claim 2, wherein a portion of said exterior surface of said tubular body is formed to be substantially curved.

14. The optical analysis chamber of claim 2, wherein said exterior surface of said tubular body further includes at least one facet for cooperatively aligning adjacent said optical analysis chambers within an array of said optical analysis chambers.

15. The optical analysis chamber of claim 2, wherein said exterior surface of said tubular body further includes a pair of opposed planar facets for cooperatively aligning adjacent said optical analysis chambers within an array of said optical analysis chambers.

16. The optical analysis chamber of claim 1, wherein said body wall further includes a portion functioning as an second window selected to optimize optical coupling of information-carrying radiation out of said passageway

17. The optical analysis chamber of claim 16, wherein said first window is distinct from said second window.

18. The optical analysis chamber of claim 16, wherein said first window is substantially orthogonally oriented with said second window.

19. The optical analysis chamber of claim 2, wherein the cross-section of said tubular body is bilaterally symmetric.

20. The optical analysis chamber of claim 2, wherein the cross-section of the external surface of said tubular body has no axis of symmetry.

21. The optical analysis chamber of claim 17, wherein said tubular body wall further comprises a third window selected to optimally couple radiation therethrough.

22. A method of forming an optical analysis chamber comprising the step of: shaping an elongate tubular body wall having a curved exterior surface and a substantially curved interior surface defining a fluid sample passageway such that said exterior and interior surfaces cooperate to optimize optical coupling efficiency for radiation directed through said body wall.

23. The method of claim 22, further comprising the step of shaping said curved exterior surface and said substantially curved interior surface such that said exterior and interior surfaces cooperate to maximize optical coupling efficiency for radiation directed through said body wall from said passageway.

24. The method of claim 23, further comprising the step of shaping said exterior surface of said body wall so as to define a first optical window through which an optical interrogation beam passes, said window being rotationally asymmetric about the longitudinal axis of said passageway.

25. The method of claim 24, further comprising the steps of
providing a preform of said tubular body; and
drawing said preform to reduced dimensions.

26. The method of claim 25, wherein said step of providing a preform further comprises the step of providing an elongate tubular body wall having a substantially cylindrical exterior surface and a substantially cylindrical interior surface.

27. The method of claim 25, further comprising the step of removing material from said preform.

28. The method of claim 26, further comprising the step of adding additional optically-transmissive material to said preform.

29. The method of claim 25, further comprising the step of forming a portion of said exterior surface of said body wall to be substantially planar to assist in alignment with an optical source.

30. The method of claim 26, further comprising the step of forming a portion of said exterior surface of said body wall to be substantially planar to assist in alignment relative to an optical radiation collector.

31. The method of claim 30, further including the step of forming said exterior surface of said first window so as to direct optical radiation to converge upon a location near the center of said sample passageway.

32. The method of claim 26, further including the step of forming said exterior surface of said window to be acylindrical.

33. The method of claim 22, further including the step of positioning said tubular body within a holder providing facets for cooperatively engaging said exterior surface of said tubular body so as to properly align said tubular body within said holder.

34. The method of claim 24, further including the step of forming a reflective surface opposite said fluid passageway from said first window to redirect radiation towards said sample passageway.

35. The method of claim 31, wherein said step of forming a reflective surface further includes forming a substantially planar reflective surface.

36. The method of claim 31, wherein said step of forming a reflective surface further includes forming a substantially curved reflective surface.

37. The optical analysis chamber of claim 22, wherein said tubular body wall is formed from a material having a refractive index in the range from about 1.4 to about 2.0.

38. The method of claim 34, further including the step of forming portion of the tubular body wall so that signal reflected by said reflective surface appears to emerge from the same depth within the capillary.